

INSTRUCTIONAL ARTICLE

Cultural aspects of adoption of innovation: A case study with implementing a lecture-recording system in a university in Hong Kong

Carmel McNAUGHT¹, Paul LAM¹, Edman CHAN², Shereen YUEN¹,
Eric HO¹

¹ Centre for Learning Enhancement And Research

² Information Technology Services Centre
The Chinese University of Hong Kong, Hong Kong

Address for Correspondence: Professor Carmel McNaught, Professor of Learning Enhancement, Centre for Learning Enhancement And Research (CLEAR), Rm 302, Academic Building No. 1, The Chinese University of Hong Kong, Shatin, New Territories, Hong Kong.

Email: carmel.mcnaught@cuhk.edu.hk

Recommended citation:

McNaught, C., Lam, P., Chan, E., Yuen, S., & Ho, E. (2012). Cultural aspects of adoption of innovation: A case study with implementing a lecture-recording system in a university in Hong Kong. *Journal of the NUS Teaching Academy*, 2 (2), 95-108.

<https://doi.org/10.24112/ajsotl.23266>

Cultural aspects of adoption of innovation: A case study with implementing a lecture- recording system in a university in Hong Kong

ABSTRACT

The literature indicates clear benefits associated with the use of lecture-recording systems such as Echo³⁶⁰, which was introduced in 2010 as an initiative to enhance the learning experience of students at the Chinese University of Hong Kong (CUHK). However, in the year of this small-scale study, we did not generate a great deal of interest among CUHK teachers, and indeed encountered disinterest and some concerns about the system; although those who used the system did find it valuable and useful. There was also a lack of motivation to use this system among students; in particular, students who studied an elective General Education course had lower ratings on the usefulness of the videos than students in a compulsory engineering course. These findings are interpreted in terms of the challenges involved in innovation and change. There are universal factors involved but the instantiation of these factors has a local character, involving aspects of Chinese culture.

INTRODUCTION AND RATIONALE FOR THE STUDY

Earlier systems for videotaping lectures and putting these resources online were laborious and expensive (Bell, Cockburn, McKenzie, & Vargo, 2001). However, advanced lecture-recording systems are now in place for recording, editing and publishing lectures automatically. Technology that bypasses manual participation in the process of recording is called Authoring on the Fly (AOF) (Zupancic & Horz, 2002) or Web-based Lecture Technology (WBLT) (Phillips et al., 2007; Green et al., 2008). The configuration of an AOF system requires minimal technical skills and therefore users can create recordings in a relatively short period of time (Bennett & Maniar, 2007). The use of AOF systems has been reported in many countries (e.g. Bell et al., 2001; Fujii, Itou, & Ishikawa, 2006; Green et al., 2008; Hartle, Bar, Trompler, & Robling, 2005; Hermann, Hurst, & Welte, 2006; Zhang, Crawford, Rui, & He, 2005).

A number of factors influenced the establishment of the small-scale project reported in this paper. These can be summarised as follows:

- The authors are members of the eLearning Service at the Chinese University of Hong Kong (CUHK), and “scanning” for, and then trialing, useful learning technologies is part of our role. CUHK’s eLearning Service has staff from both the Information Technology Services Centre (ITSC) and the Centre for Learning Enhancement And Research (CLEAR) and provides technical, learning-design and evaluation support to all teachers and departments.
- The first author has used AOF systems elsewhere and has been impressed by their potential.
- There is a major expansion of student numbers and curriculum change in all universities in Hong Kong (McNaught & Young, ²⁰¹¹), and we hoped that teachers might be more open to innovation during this period of change.
- Over the last decade, despite good IT infrastructure at the University and relatively good support for teachers from the eLearning Service, uptake of the use of technology for teaching and learning at CUHK has been low. Monitoring all innovations is important to understanding the drivers for innovation and change in this context.
- There was seed funding available for an innovation of this nature.

Once we had decided that a pilot of an AOF system would be undertaken, we established a project plan, bearing in mind the context of CUHK. Indeed, a major consideration for our project focused on adoption of innovation. Even at the outset, we were aware that this might be more challenging than overcoming any technical concerns.

The context of CUHK is that of a comprehensive research university with a bilingual tradition – the only university in Hong Kong to see its Chinese character as a clear distinguishing feature – and a strong face-to-face collegiate structure. Acceptance of educational innovations is often uncertain, particularly in Hong Kong. For example, evidence from eLearning activity logs of the Learning Management Systems at CUHK indicates that the majority of eLearning activities used at CUHK are information-based (Lam, Lo, Yeung, & McNaught, ²⁰¹⁰). This finding comes from a study that contrasted two sets of log data from two consecutive academic years (^{2007_2008} versus ^{2008_2009}). Results revealed an increase in the adoption of simple eLearning strategies (such as uploading notes and PowerPoints) but the adoption of complex strategies which encouraged interactions among students (such as structured forums, online role plays, quizzes, progressive case analyses) actually decreased over the two years. McNaught, Lam, Kwok and Ho (²⁰¹¹) noted that even our teachers, who embrace innovation and who have adopted Web 2.0 and social-media technologies in their teaching and learning, have concerns about being adequately rewarded and supported in their innovative projects. Further, in Hong Kong, many teachers are reluctant to engage in creating and sharing learning objects with others (McNaught et al., ²⁰⁰⁹). With this backdrop of a conservative teaching and learning culture, the research team knew it was important to explore teachers’ and students’ views about adoption of lecture-capture technology.

LECTURE-CAPTURE SYSTEMS: POSITIVE AND LESS POSITIVE REPORTED EXPERIENCES

Several previous studies have reported positive findings. For example, in the study of Shanley, Saranga and Ali (2008), students reported AOF to be useful in clarifying issues which “they missed or did not understand in the original lecture” (p. 79), comments also echoed by Hermann et al. (2006). In addition, Hartsell and Yuen (2006) suggested that lecture recording was particularly useful in cases which involved complex issues. McNeill et al. (2007) provided practical advice for integrating lecture recordings into course design; their advice was based on responses from 800 Australian university students who were clearly positive about the technology. In a three-year study of an automated capture and access system, involving weblog data, class attendance data and questionnaires, Brotherton and Abowd (2004) provided evidence of changed patterns of student study routines that indicated better study strategies.

Echo³⁶⁰ (<http://www.echo360.com>) is an example of an AOF system that captures class lectures and converts them into podcasts, video, rich media, and other formats automatically and reliably, thus enabling student review. The process of recording and publishing can be carried out without the participation of teachers as the schedule of recording can be pre-set by central staff at the beginning of a term. The choice of when recordings should take place is flexible; teachers may pre-set to record specific lectures or all lectures in the course. The teacher’s voice, video and materials are synchronised, giving a high-quality replay experience. Search functions are also included; students may jump to the particular segment of a lecture that they wish to review by inputting keywords. Teachers can review their recordings and decide what to do with them (further editing, sending the link immediately to students, or keeping them for later reference).

Apart from recording lectures, this system can also be used to prepare additional learning materials (e.g. “remedial” explanations or advanced topics) for students or the wider public; to support students’ development of their presentation skills (very effective as a group activity); and for teachers to self-evaluate their own teaching.

Despite these potential benefits, there are several concerns that have been raised. One concern is whether students will attend classes if they can watch the session later online at a convenient time. There is a dilemma here: if classes are just presentations, there is no incentive for students to attend; if the classes are interactive and have sections with student input and activity, then it is hard for the AOF system to capture the quality of the interaction. Indeed, there are reports that AOF systems restrict teachers’ spontaneity and interactivity (Bennett & Maniar, 2007). As a result, Woo et al. (2008) suggested that while the usefulness of lecture-recordings in distance learning is unquestionable, teachers in general tend to be more conservative about its use in traditional face-to-face settings.

Another concern relates to students’ study habits. Shanley et al. (2008) reported students as being over-optimistic in their enthusiasm: students who supported the

practice of lecture-recording claimed that they would view the videos at various points in their course but the actual usage of the videos was scarce.

METHODOLOGY

Funding was available to support the Echo³⁶⁰ system on a limited scale for three years. The goal of the project was to evaluate Echo³⁶⁰ from pedagogical and pragmatic perspectives, the latter including likelihood of adoption and an associated preliminary analysis of likely return on investment.

The equipment that was used for the test-run consisted of one central system and three on-location recording units. The central system could remotely control the three units in three different locations simultaneously. Two of these recording units were fixed in big lecture rooms. The third recording unit was mobile and could be installed upon request.

The system had the first year of service during ²⁰¹⁰. The first year of our project was in two phases: a pilot phase (first half-year) when teachers were selected and invited to use the system; and a more authentic service phase (second half-year) when the system was available to all teachers. In the service phase, the system was widely advertised and all teachers who could teach in one of the serviced rooms, or who would be willing to book the mobile unit, were welcome to use the service.

Throughout the year, we served ^{3,190} students in ¹⁰ courses, and produced ¹⁷ public-lecture recordings and ⁶³ training videos. However, only ¹³ teachers were involved (CUHK has ^{~1500} teaching staff). Disciplines covered included Architecture, Biochemistry, Biology, Biomedical Sciences, Chinese Medicine, Computer Science Engineering, Law, and Physics. The majority of our participants used Echo³⁶⁰ for recording lectures and saved them as records for students in the current cohort to review. The use of the system in other kinds of learning activities such as additional learning resources or to support students' presentations was rare.

Several methods for monitoring and evaluation of the use of the system by teachers and students were employed in both stages of the project. In the pilot phase, the eight teachers who had participated in the test-run of the service were asked to review their experience by responding to open-ended questions via email. Five of these teachers responded to these questions.

In the second phase, we designed survey forms for both students and teachers. These forms were administered in November, ²⁰¹⁰. Eight of the ¹³ teachers replied, giving a response rate of ^{61.50%}. We administered the student survey to two quite different courses (Engineering and General Education) where the teachers most actively disseminated materials via the system on the grounds that these students were more likely to give us considered feedback. We contacted ⁵⁹ students in these two courses; ⁵⁸ of them replied, giving a response rate of ^{98.3%}.

Throughout the one-year period, there was focused internal discussion and record-keeping among people in the support team. The support team consisted of a number of staff from both ITSC and CLEAR – both long-term, experienced staff and a team of fresh graduates who are available for hands-on support with any teacher. The availability of these young “eLearning assistants” (Kwok & Cheung, 2010) ensured that teachers did have access to support for production of basic good-quality materials to use in lectures, should they choose to use it.

RESULTS: PILOT PHASE (JANUARY 2010 TO AUGUST 2010)

Our pilot teachers had been selected on the basis of their being known by staff in the eLearning Service to be interested in teaching quality and being willing to try out new systems and ideas. We wanted to ensure that any operational challenges could be ironed out without causing undue stress to teachers. As a result, we were not surprised that the pilot phase results were positive – similar to the positive findings reported elsewhere. The teachers appreciated the ease of use of the lecture-recording system. They also acknowledged considerable learning benefits that the system had for their students’ learning processes; these comments were undoubtedly anecdotal. These teachers regarded the system as an extension to the design of other learning activities. They had also adopted the system in order to evaluate their own teaching performance. One typical glowing comment:

“Echo³⁶⁰ is a very user-friendly system that automatically synchronizes the speech and the slides of my presentation into a single file. I just teach as usual and no extra work has to be done. I and my students can then view the file simply on the web without the need to install any special software. This system greatly helps me improve my teaching skill and facilitates students to prepare and revise my lectures. I would strongly recommend Echo³⁶⁰ to other teachers!” (Biology)

Feedback collected in this period of time also highlighted a number of technical issues to be addressed. Issues such as the ease of download, the availability of the system in more rooms and the clarity of the recordings were mentioned. However, so far, so good...

AUTHENTIC SERVICE PHASE (FIRST TERM 2010-2011, SEPTEMBER TO DECEMBER, 2010)

Teachers’ comments in the survey

We asked teachers how often Echo³⁶⁰ videos were issued to students in this course. Four out of the six teachers who replied to this question in the survey stated that videos were prepared on a weekly basis while the other two only used the system once during the term.

With regard to the degree of usefulness and the usability of the system, teachers

were in general only mildly positive as shown in Table 1. Opinions were collected on a 5-point Likert scale, with a range of 3.2 to 4.2. The standard deviations for items 6 and 7 (shaded in Table 1) are somewhat smaller than for the other items, indicating a slightly higher degree of consensus.

Table 1. Teachers' survey responses in the authentic service phase; n = 8 (scores on 5-point Likert scale, 5 being "strongly agree" and 1 being "strongly disagree")

Questions	Mean	SD
1. I felt that the videos helped students learn the course material.	3.3	1.8
2. Videos helped students in their revision.	3.5	1.8
3. Videos helped me present course information to students.	4.0	1.1
4. Videos were a convenient way for students to access materials.	3.5	1.9
5. Recording the videos was easy.	3.2	1.3
6. I would suggest other teachers use Echo ³⁶⁰ .	3.8	0.8
7. I like the Echo ³⁶⁰ because it provides different output formats which allow students to watch them on different devices.	4.2	0.8
8. I like Echo ³⁶⁰ because of the care-free automation of recording.	3.3	1.4

The last part of the questionnaire for teachers consisted of open-ended questions relating to possible changes in teaching style or other enhancements to teaching and learning. Four teachers replied to this section.

Because of technical concerns with an unfamiliar system, three of the four teachers did not find that the system had enhanced their style of teaching and learning. One teacher believed he had underperformed because his performance was being recorded. "Since this is the first time I have used Echo³⁶⁰, I sometimes feel uneasy in the presence of a camera, this may even slightly affect my teaching." The fact that the camera was fixed had restrained the mode of presentation and the adoption of a range of teaching tools as reported by the other two of our respondents. As a result, teachers had to adopt PowerPoint, one of the few elements that can be seen easily in videos, as their major mode of teaching. One of them said: "It [Echo] is somehow making PowerPoint presentation mandatory. Sometimes the lecturers are required to stand still for easier recording, which suppressed the energy of a speaker" while the other reported that "one major change is that I ... depend more on PowerPoint. I ... prepare all information and organize it into a PowerPoint file, improvisation such as writing on the blackboard would be less frequent".

Despite technical constraints, the system had encouraged teachers to polish their teaching materials. In addition, the recordings had encouraged them to review the efficacy of their teaching. They agreed unanimously that the system had positive features. One teacher noted that "[Echo] make[s] me think key ideas through and push[es] me to try to make face-to-face sessions interactive". Another teacher remarked that "it is always useful to watch back my own classroom teaching video, as it stimulates my reflection. I would think video-taping is crucial for teacher improvement"; he concluded that he "treat[ed] it [the system] as a great tool for

self evaluation”. The one teacher who employed the system to make extra resources was very positive about enhancement to his teaching: “it can provide leisure time for teacher to open room for discussion in class”. He appreciated the system and stressed that “I am highly motivated to use [it]”.

Students’ comments in the survey

Students differed from their teachers to a greater extent with regard to their perceptions about the benefits of Echo³⁶⁰. We administered the survey to students in two courses; Class A was a compulsory course in Engineering and Class B was an elective General Education course. Teachers from both of these courses recorded their lectures on a weekly basis and they disseminated the videos to all students immediately after each lesson. The application of Echo in both courses appeared to be similar. Nevertheless, students from these courses held opinions that differed significantly from each other with regard to the usefulness of recordings (Table 2). In general, students in Class A considered the videos to be slightly more helpful. Students in Class B, on the other hand, clearly believed that the videos were not necessary. Of course, the skill of the teacher as a classroom presenter will strongly influence students’ opinions about several of the factors. Also, the fact that one course was compulsory and one was elective is likely to be a discriminating factor. This data is therefore ambiguous and, as in all evaluation studies, multiple data sources are needed.

However, the point that should be noted is that, in these two courses, students were not overly enthusiastic about lecture-capture technology.

For both classes, the standard deviations for items 8, 9 and 10 (shaded in Table 2) are somewhat smaller than for the other items, indicating a slightly higher degree of consensus on these items relating to class attendance.

Positive comments were, however, obtained from both sets of students in responses to the open-ended questions of the survey. Students considered Echo to support change in their approaches to learning by motivating revision and self-learning (44.40%); and by streamlining study time (11.10%). Comments: “I keep revising the lectures and catch up with schedule of the class using Echo³⁶⁰”; “it can provide a second class and second learning”; and “videos made it possible for me to review topics/some issues which I have forgotten after attending the lecture”.

One of the conventional drawbacks in the adoption of video recordings is that students can review lecture recordings after class without physically attending any one of them. Many of the students (44.10%) considered that the system resulted in more absences from class. “[Students] don’t worry about missing class”. Although students acknowledged they were concerned about absenteeism, no one explicitly admitted they were the ones who skipped class; 28 replies (43.30%) ticked “No” when they were asked if they had missed any classes because of Echo³⁶⁰; the rest of our respondents (n = 30) left the item blank. It is interesting that in Brotherton and Abowd’s (2004) detailed study, there was no evidence of increased absenteeism from class. This is an aspect we will consider in future evaluations.

Table 2. Comments of students in two classes (scores on a 5-point Likert scale, 5 being “strongly agree” and 1 being “strongly disagree”)

	Class A (Engineering n = 33)	Class B (General Education n = 25)
1. Videos helped me to prepare for homework.	3.0 (1.3)	2.6 (1.8)
2. Videos helped me to prepare for exams.	3.5 (1.2)	2.5 (1.8)
3. I would prefer that my others courses also use Echo ³⁶⁰ .	3.8 (1.2)	3.2 (1.9)
4. Videos clarified concepts discussed in class.	3.3 (1.3)	2.7 (1.9)
5. I learned more in this class by using the Echo ³⁶⁰ videos than I would have if they had not been available.	3.1 (1.3)	2.4 (1.8)
6. I felt that the videos helped me learn the course material.	3.4 (1.4)	2.6 (1.8)
7. Videos helped me in my overall revision.	3.5 (1.4)	2.6 (1.8)
8. I attend lectures because being in class helps me do my homework.	3.7 (0.9)	3.7 (0.7)
9. Videos helped me catch up when I missed class.	4.2 (0.7)	3.8 (0.9)
10. I attend lectures because I could follow all parts of the classroom discussion, included students questions.	3.6 (0.9)	3.9 (0.8)
11. Since I rarely missed class, I did not think Echo ³⁶⁰ was necessary.	2.8 (1.0)	3.3 (1.2)

In addition, several students noted that the system supports learning when students genuinely cannot attend class, for example: “it [Echo] is a good tool for students who are sick”.

Overall views of the support team

As noted above, the support team for the project comprised staff from both ITSC and CLEAR. Ongoing discussions among the support team throughout the whole year can be summarised as follows:

- *Acceptability*: It was hard to persuade CUHK teachers to use the system because of their concerns about class attendance and general perceptions about the educational value of the recordings.
- *Quality of video*: The support team managed and monitored the system remotely (via the Internet). However, some teachers found it difficult to operate the system in the absence of immediate support; this might have decreased the quality of recordings. There are clear implications for professional development with our risk-averse teachers.
- *Financial considerations*: Echo³⁶⁰ is expensive and therefore only three sets of equipment were available during the course of our study. At this stage we do not have sufficient demand to seek a higher budget. This is a “chicken and egg”

situation; if a lecture-capture system was a default in most CUHK classrooms, then it would probably have a higher uptake. With limited equipment, we could not persuade teachers to book the mobile set and invest extra effort to try the system. Of course, with limited uptake, we could not get more equipment. One consequence of this impasse is that the support team is investigating a number of open-source systems.

- *Technical support:* Adjustments of camera positions and arrangements for “touchups” should be made available to assure the quality of recordings. This would require a larger support team who could intervene at times upon requests, particularly at times of retrieval and video editing.
- *Access rights:* Teachers were concerned with both the accessibility and the storage of these recordings. Many of them were concerned that the videos would end up on YouTube for public view. This could have contributed to the nervousness that some teachers demonstrated.

DISCUSSION

What do these results imply for our University? Over the year, there was only a slightly increased level of acceptability towards the use of the Echo system at CUHK. Potential benefits and possibilities of running the system were recognised. However, it is clear that we need to focus even more carefully on issues relating to acceptance and technical support.

Worldwide, many of the success stories about innovation in teaching and learning (many of which involve technology) are cases of pioneering teachers who are “early adopters” (Rogers, ²⁰⁰³) working in isolated courses in which certain positive results have been achieved. Apart from these pioneering cases, most other teachers in the “mainstream majority” use quite simple strategies (Anderson, Varnhagen & Campbell, ¹⁹⁹⁸). It is well recognised that innovation requires policy support from the top (top-down) and well-grounded support at the coal-face (bottom-up). The third “ingredient” in the innovation recipe is culture (McNaught, Phillips, Rossiter, & Winn, ²⁰⁰⁰).

The teaching and learning culture at CUHK is a conservative one. In all universities where the majority of teachers are of Chinese heritage, we need to acknowledge the Chinese concept of “face” in implementing innovation. Some of the issues relating to concerns about being on public (or even semi-private) record reflect the concept of face. The positive side of face is care for the other, a gentle politeness (Brown & Levinson, ¹⁹⁸⁷). The negative side of face is avoidance of conflict at all costs and extreme unwillingness to take risks. A long-term psychologist at CUHK, Michael Bond (¹⁹⁹¹) described the constraints of face in these terms:

“Given the importance of having face and of being related to those who do, there is a plethora of relationship politics in Chinese culture. ... the use of external status symbols, sensitivity to insult, ... the sedulous avoidance of criticism, all abound, and require considerable

readjustment for someone used to organizing social life by impersonal rules, frankness, and greater equality.” (p. 59)

Of course, there are innovative Chinese teachers and the stories of several of our excellent, and often innovative, CUHK teachers are recounted in Kember et al., (2006). In this book and many other studies from CUHK, there is no evidence of a discipline bias, and we have no evidence at this stage to think that discipline area should be a particular factor affecting adoption of AOF systems. Clearly, at CUHK there is a “comfort zone” where many teachers across the University feel confident in trying new ideas and feel rewarded when they do. Confidence flourishes with satisfying prior personal experiences of innovation and this usually means having access to good support – in terms of professional development, technical support and adequate time. Feeling rewarded inevitably involves appropriate institutional personnel policies.

University policies and structures do not develop in isolation, and national (and international) trends and priorities impinge on what happens locally. The study by McNaught et al. (2000) took place across 25 Australian universities well over a decade ago. Figure 1 summarises the key factors affecting the adoption of technology for teaching and learning in Australia in the late 1990s. The factors clustered into three groups – culture, policy and support. It is striking that the factors that we experience at CUHK are essentially the same, though some (such as “access to information”) are less problematic now; indeed, perhaps this factor is now “overload of information”! What does change is the nuance – the ways these factors play out in each context.

In this study, we have highlighted the issue of “face” as this seems to be a key cultural factor to be considered when implementing a highly personalised and semi-public technology such as a lecture-capture system. In our future work with lecture-recording systems, we will attempt to build teachers’ confidence by providing more support and by making it clear that the release of recordings is under teachers’ control and is in a secure system.

Students also are quite conservative; this is not surprising as they come from an examination-oriented school system where the strategies used for learning are structured and hierarchical (Watkins, 1996). However, while students are, like their teachers, risk-averse, they are willing to consider new approaches to study. A survey on CUHK students’ eLearning use and needs (Lam, Lee, Chan & McNaught, 2010) found that, on the whole, students’ attitudes towards eLearning were moderately positive. Students who more readily used technology in their everyday lives tended to have more positive perceptions of eLearning. Although CUHK students have limited experience of eLearning strategies, they have relatively high expectations of eLearning strategies and their benefits, and the expected usefulness of using these strategies was high as well. Interestingly, the more experience students have with eLearning, the more positive they appear to be towards the use of technology for learning (Lam, Lee, Chan, & McNaught, 2011). Those who used a certain eLearning strategy more tended to want more of the same strategy; these students were also more positive about the various learning benefits associated with eLearning. So,

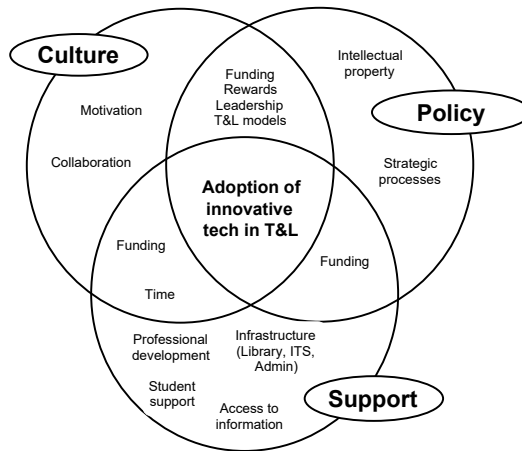


Fig. 1. Universal factors involved in adoption of innovative technology in teaching and learning (after McNaught et al., 2000, p. 139).

we conclude that our students' reticence is largely a matter of their unfamiliarity with the technology.

Our University is a long way from espousing the views of the élite universities who make substantial course offerings freely available to the world (Walsh, 2011). These initiatives appear to be motivated by an interesting combination of confident advertisement of one's offerings with a genuine desire to share and encourage re-use. If we at CUHK can support our teaching staff in feeling confident about sharing their own classroom experiences with their students and perhaps with others, we will have made progress towards a more open higher-education system.

CONCLUSION

We have observed an increase in the adoption of AOF systems in many institutions around the world and many have reported success stories. Our first year of experience in running the Echo³⁶⁰ service can be summarised as a mild success. The small number of teachers who used the system found it valuable, though there were divided opinions among students. In order to expand the service, we need to seek strategies that are appropriate to this Chinese university that will enable our teachers to feel more comfortable with the semi-public nature of the technology. We expect that students will use the resources, if and when lecture capture becomes an accepted practice.

Although this case study is situated within one institution in Hong Kong, the findings are likely to be relevant to other Asian universities. Even though it is a small-scale study, it forms a base-line for the continuing evaluation we will do in the coming years.

ACKNOWLEDGMENTS

An internal CUHK grant is gratefully acknowledged.

REFERENCES

- Anderson, T., Varnhagen, S., & Campbell, K. (1998). Faculty adoption of teaching and learning technologies: Contrasting earlier adopters and mainstream faculty. *The Canadian Journal of Higher Education*, 28 (2,3), 71-98.
- Bennett, E., & Maniar, N. (2007). Are videoed lectures an effective teaching tool? Retrieved August 8, 2011, from <http://stream.port.ac.uk/papers/Are%20videoed%20lectures%20an%20effective%20teaching%20tool.pdf>
- Bell, T., Cockburn, A., McKenzie, B., & Vargo, J. (2001). Flexible delivery damaging to learning? Lessons from the Canterbury Digital Lectures Project. In C. Montgomerie & J. Viteli (Eds.), *ED-MEDIA 2001* (pp. 117-122). Proceedings of the 13th Annual World Conference on Educational Multimedia, Hypermedia & Telecommunications. Tampere, Finland, June 25-30. Norfolk, VA: Association for the Advancement of Computers in Education (AACE).
- Bond, M. H. (1991). *Beyond the Chinese face. Insights from psychology*. Oxford: Oxford University Press.
- Brotherton, J. A., & Abowd, G. D. (2004). Lessons learned from eClass: Assessing automated capture and access in the classroom. *ACM Transactions on Computer-Human Interaction*, 11 (2), 121-155.
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage*. Cambridge: Cambridge University Press.
- Fujii, A., Itou, K., & Ishikawa, T. (2006). LODEM: A system for on-demand video lectures. *Speech Communication*, 48 (5), 516-531.
- Green, D., McNeill, M., Gosper, M., Woo, K., Phillips, R., & Preston, G. (2008). Web based lecture technologies: A lens intensifying the changing roles of learners and lecturers. In J. Luca & E. R. Weippl (Eds.), *ED-MEDIA 2008* (pp. 3733-3741). Proceedings of the 20th annual World Conference on Educational Multimedia, Hypermedia & Telecommunications, Vienna, Austria, 30 June-4 July. Chesapeake VA: Association for the Advancement of Computers in Education.
- Hartsell, T., & Yuen, S. (2006). Video streaming in online learning. *Association for the Advancement of Computers in Education (AACE) Journal*, 14 (1), 31-43.
- Hartle, M., Bar, H., Trompler, C., & Robling, G. (2005). Perspectives for lecture videos. In J. C. Cunha & P. D. Medeiros (Eds.), *Euro-Par 2005 Parallel Processing. Lecture Notes in Computer Science*, 3648, 901-908, Dordrecht: Springer.
- Hermann, C., Hurst, W., & Welte, M. (2006). Informatics education Europe-the eLecture portal: An advanced archive for lecture recordings. In *Proceedings of the Informatics Education Europe Conference*, 9-10 November, Montpellier, France.
- Kember, D., Ma, R., McNaught, C., & 18 exemplary teachers. (2006). *Excellent university teaching*. Hong Kong: Chinese University Press.
- Kwok, M., & Cheung, E. (2010). The eLearning assistant service. Presented at the Teaching and Learning Innovation Expo 2010, The Chinese University of Hong Kong. Retrieved August 8, 2011, from <http://www.cuhk.edu.hk/eLearning/expo2010/PDF/T18.pdf>
- Lam, P., Lee, J., Chan, M., & McNaught, C. (2011). Students' use of eLearning strategies and their perceptions of eLearning usefulness. *Proceedings of Global Learn 2011*, Melbourne Australia, 28 March-1 April.
- Lam, P., Lee, J., Chan, M., & McNaught, C. (2010). ELearning needs among students who lead a digital life in nearly every aspect except learning. In J. Cordeiro, B. Shishkov, A. Verbraeck & M. Helfert (Eds.), *CSEdu 2010* (pp. 268-275). Proceedings of the 2nd International Conference on Computer Supported Education, Valencia, Spain, 7-10 April.
- Lam, P., Lo, J., Yeung, A., & McNaught, C. (2010). Examining diffusion and sustainability of e-learning strategies through weblog data. *International Journal of E-Adoption*, 2 (3), 39-52.
- McNaught, C., Lam, P., Cheng, K-F., Kennedy, D. M., & Mohan, J. B. (2009). Challenges in employing

- complex eLearning strategies in campus-based universities. *International Journal of Technology Enhanced Learning*, 1 (4), 266-285.
- McNaught, C., Lam, P., Kwok, M., & Ho, E. C. L. (2011). Building institutional capacity for the use of social media. In B. White, I. King & P. Tsang (Eds.), *Social-media tools and platforms in learning environments: Present and future* (pp. 137-152). Heidelberg: Springer. DOI 10.1007/978-3-642-20392-3_8
- McNaught, C., Phillips, P., Rossiter, D., & Winn, J. (2000). *Developing a framework for a usable and useful inventory of computer-facilitated learning and support materials in Australian universities*. Evaluations and Investigations Program report 9/11. Canberra: Higher Education Division Department of Employment, Education, Training and Youth Affairs. Retrieved August 8, 2011, from <http://www.dest.gov.au/highered/eippubs1999.htm>
- McNaught, C., & Young, K. (2011). Ensuring quality in undergraduate curriculum reform: Experience in Hong Kong. In *Demonstrating quality*. Proceedings of the Australian Universities Quality Forum (AUQF) 2011 Melbourne, Australia, 29 June –1 July. Melbourne: Australian Universities Quality Agency. Retrieved August 8, 2011, from http://www.auqa.edu.au/files/auqf/paper/paper_d.pdf
- McNeill, M., Woo, K., Gosper, M., Phillips, R. A., Preston, G., & Green, D. (2007). Using web-based lecture technologies – advice from students. In *Enhancing higher education, theory and scholarship*, Proceedings of the 30th HERDSA annual conference. Adelaide: Higher Education Research and Development Society of Australasia. Retrieved August 8, 2011, from <http://www.herdsa.org.au/wp-content/uploads/conference/2007/papers/p125.pdf>
- Phillips, R. A., Gosper, M., McNeill, M., Woo, K., Preston, G., & Green, D. (2007). Staff and student perspectives on web-based lecture technologies: insights into the great divide. In R. Atkinson, C. McBeath, S. W. A. Soong & C. Cheers (Eds.), *ICT: Providing choices for learners and learning* (pp. 854-864). Proceedings of the 24th annual Australasian Society for Computers in Learning in Tertiary Education conference, Singapore, 2-5 December. Retrieved August 8, 2011, from <http://www.ascilite.org.au/conferences/singapore07/procs/phillips.pdf>
- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.), New York: The Free Press.
- Shanley, J., Saranga, J., & Ali, I. (2008). The use of lecture recording to enhance student learning on a physiotherapy master's module. In *Proceedings of ELATE⁰⁸ 10th Anniversary Conference and Exhibition, Enhancing our Learning & Teaching Environments-Looking Beyond* 2010 (pp. 79-82), Coventry, UK, 24 June. Retrieved August 8, 2011, from http://moremathsgrads.org.uk/db_documents/Elate2008_ConferenceProceedings.pdf#page=80
- Walsh, T. (2011). *Unlocking the gates: How and why leading universities are opening up access to their courses*. Princeton, New Jersey: Princeton University Press.
- Watkins, D. (1996). Hong Kong secondary school learners: A developmental perspective. In D. A. Watkins & J. B. Biggs (Eds.), *The Chinese learner: Cultural, psychological and contextual influences* (pp. 107-119). Hong Kong and Melbourne: Comparative Education Research Centre, University of Hong Kong & the Australian Council for Educational Research.
- Woo, K., Gosper, M., McNeill, M., Preston, G., Green, D., & Phillips, R. A. (2008). Web-based lecture technologies: Blurring the boundaries between face-to-face and distance learning. *ALT-J*, 16 (2), 81-93.
- Zhang, C., Crawford, J., Rui, Y., & He, L. (2005). An automated end-to-end lecture capturing and broadcasting system. In *Proceedings of the 13th Annual ACM international Conference on Multimedia: MULTIMEDIA'05* (pp. 808-809), Singapore, 6-12 November. ACM Press.
- Zupancic, B., & Horz, H. (2002). Lecture recording and its use in a traditional university course. In M. E. Caspersen, D. Joyce, D. Coelman & I. Utting (Eds.), *Proceedings of the 7th Annual Conference on Innovation and Technology in Computer Science Education 2002* (pp. 24-28), ACM Press, Aarhus, Denmark, 24-26 June.